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No. TC / BBMP / BYT-PMC / 398/ 19-20

To
The Executive Engineer
Yalahanka Project Division
Bruhat Bangalore Mahanagara Palike
Bangalore – 560 092

Date:

Dear Sir

Sub: **Package-02 1. Improvements to Roads and Drains From Hegdenagar petrol bunk to MCECHS park in Ward No. 06 2. Improvements to Roads and Drains in Hegdenagar and Surrounding areas in Ward No. 06 3. Improvements to Roads and Drains in Munivenkatappa Layout Nagawara in Ward No. 06 4. Drilling of Borewells and Maintance in Ward No.06**

In reference to the above subject, this is to bring to your kind notice that we have scrutinized the **First and Final bill** submitted by **Sri. HONNAPPA MURTHY. No 1271, 9th Main Road , 2nd Stage, Mahalakshmipuram, Banglore -86** towards the above said work and arrived at an amount of **Rs 20453006 (Rupees Two Crore Four Lakh Fifty Three Thousand Six Only)**The work has been completed satisfactorily.

This is for your kind information.

Thank you and assuring you the best of our Services at all the times

For Tejus Consultants
(Nischal M)

Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

TEJUS CONSULTANTS
No. 58, 3rd main, 6th Cross, 1st Stage KHB Colony, Basaveshwaranagar, Bangalore - 560079, O : +91 80 23287532, tejusconsultants@gmail.com

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Test Report on Compressive strength of Solid Block

Project	1. Improvements to Roads and Drains From Hegdenagar petrol bunk to MCECHS park in Ward No. 06 2. Improvements to Roads and Drains in Hegdenagar and Surrounding areas in Ward No. 06 3. Improvements to Roads and Drains in Munivenkatappa Layout Nagawara in Ward No. 06 4. Drilling of Borewells and Maintance in Ward No.06
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	HONNAPPA MURTHY
Cross sectional area	60000mm2
Size of cube	400mm x 150mm x 200mm
No. of Block Tested	3
Reference IS code:	IS:2185 (Part 1)- 2005

Sl.No.	Date of Sampling	Date of testing	Area of Cube	Failure load	Compressive strength	Minimum Required compressive strength of individual units
			mm^2	KN	N/mm^2	N/mm^2
1	12-06-2019	12-06-2019	60000	315.00	5.25	5.21
2	12-06-2019	12-06-2019	60000	315.00	5.25	
3	12-06-2019	12-06-2019	60000	308.00	5.13	

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TEST REPORT

Project	1. Improvements to Roads and Drains From Hegdenagar petrol bunk to MCECHS park in Ward No. 06 2. Improvements to Roads and Drains in Hegdenagar and Surrounding areas in Ward No. 06 3. Improvements to Roads and Drains in Munivenkatappa Layout Nagawara in Ward No. 06 4. Drilling of Borewells and Maintance in Ward No.06	
Clients	Bruhat Bangalore Mahanagara Palike	
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	HONNAPPA MURTHY	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	12.5 mm down size		Proposed Use	Concrete	
Sample Location	Plant		Date of Sampling	15-06-2019	
			Date of Testing	15-06-2019	
IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	595	595	5.95	94.05	90-100
10.0	3340	3935	39.35	60.65	40-85
4.75	5415	9350	93.50	6.50	0-10
Pan	650	10000			

Remarks : Satisfactory / Not Satisfactory

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TEST REPORT	
Project	1. Improvements to Roads and Drains From Hegdenagar petrol bunk to MCECHS park in Ward No. 06 2. Improvements to Roads and Drains in Hegdenagar and Surrounding areas in Ward No. 06 3. Improvements to Roads and Drains in Munivenkatappa Layout Nagawara in Ward No. 06 4. Drilling of Borewells and Maintance in Ward No.06
Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	HONNAPPA MURTHY

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	**Sand/M sand**	**Proposed Use**	Concrete
Location/Source	**At Plant/site**	**Date of Sampling**	15-06-2019
Period of Soaking	**24 hours**	**Date of Testing**	15-06-2019

Sl. No.	Test Property		TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.		640	663	650	
B	Weight of oven - dry sample gm.		632	655	642	
C	Weight of Pycnometer Filled with water gm		1275	1275	1275	
D	Weight of Pycnometer + sample + water gm		1673	1688	1688	
E	Bulk specific gravity	B	2.612	2.620	2.709	**2.647**
		(C + A - D)				
G	Absorption (%)	(A - B) *100	1.266	1.221	1.246	**1.244**
		B				

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TEST REPORT	
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Clients	Bruhat Bangalore Mahanagara Palike
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	HONNAPPA MURTHY

SIEVE ANALYSIS

Total Weight:	**3000**	gms			
Type of Materia	**Fine aggregate (River Sand/M sand)**		**Proposed Use**	Concrete	
Sample Locatior	At Plant/site		**Date of Sampling**	15-06-2019	
			Date of Testing	15-06-2019	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing (Zone-II)**
10.00 mm	0	0	0	100.00	**100**
4.75 mm	240	240	8.00	92.00	**90 - 100**
2.36 mm	285	525	17.50	82.50	**75 - 100**
1.18 mm	415	940	31.33	68.67	**55 - 90**
0.600 mm	575	1515	50.50	49.50	**35 -59**
0.300 mm	680	2195	73.17	26.83	**8-30**
0.150 mm	580	2775	92.50	7.50	**0 - 10**
Pan	225	3000			**-**
Remarks :			Satisfactory / Not Satisfactory		

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Test Report on Cement

Project	1. Improvements to Roads and Drains From Hegdenagar petrol bunk to MCECHS park in Ward No. 06 2. Improvements to Roads and Drains in Hegdenagar and Surrounding areas in Ward No. 06 3. Improvements to Roads and Drains in Munivenkatappa Layout Nagawara in Ward No. 06 4. Drilling of Borewells and Maintance in Ward No.06
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	HONNAPPA MURTHY
Sample ID	Cement
Date of Sample Tested	15-06-2019
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	40 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	382	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	5mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	

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Test Report on Compressive Strength of Concrete Cubes	
Project	1. Improvements to Roads and Drains From Hegdenagar petrol bunk to MCECHS park in Ward No. 06 2. Improvements to Roads and Drains in Hegdenagar and Surrounding areas in Ward No. 06 3. Improvements to Roads and Drains in Munivenkatappa Layout Nagawara in Ward No. 06 4. Drilling of Borewells and Maintance in Ward No.06
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	HONNAPPA MURTHY
Location:	Cement
Grade of concrete:	M15
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	15-06-2019	22-06-2019	7 days	8.850	22500	225	10.00	10.06
2	15-06-2019	22-06-2019	7 days	8.870	22500	226	10.04	
3	15-06-2019	22-06-2019	7 days	8.850	22500	228	10.13	

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Test Report on Compressive Strength of Concrete Cubes

Project	1. Improvements to Roads and Drains From Hegdenagar petrol bunk to MCECHS park in Ward No. 06 2. Improvements to Roads and Drains in Hegdenagar and Surrounding areas in Ward No. 06 3. Improvements to Roads and Drains in Munivenkatappa Layout Nagawara in Ward No. 06 4. Drilling of Borewells and Maintance in Ward No.06
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	HONNAPPA MURTHY
Location:	Cement
Grade of concrete:	M15
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	15-06-2019	13-07-2019	28 days	8.582	22500	340	15.11	15.21
2	15-06-2019	13-07-2019	28 days	8.762	22500	342	15.20	
3	15-06-2019	13-07-2019	28 days	8.560	22500	345	15.33	

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PRECAST SLAB (CORE) TEST REPORT

Name of Work	:	1. Improvements to Roads and Drains From Hegdenagar petrol bunk to MCECHS park in Ward No. 06 2. Improvements to Roads and Drains in Hegdenagar and Surrounding areas in Ward No. 06 3. Improvements to Roads and Drains in Munivenkatappa Layout Nagawara in Ward No. 06 4. Drilling of Borewells and Maintance in Ward No.06
Client	:	Bruhat Bangalore Mahanagara Palike
Contractor	:	HONNAPPA MURTHY
No.of Sample Tested	:	3
Date of Testing	:	20-06-2019
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20} . 100mm thick

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	90.00	0.461	2608.73	1.80	0.960	38.31	19.51	21.07	20.23	25.29
2	50.00	90.00	0.455	2574.77	1.80	0.960	38.55	19.63	21.20	20.36	25.44
3	50.00	90.00	0.452	2557.80	1.80	0.960	38.45	19.58	21.15	20.30	25.38

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

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KERB STONE (CORE) TEST REPORT

Name of Work	:	1. Improvements to Roads and Drains From Hegdenagar petrol bunk to MCECHS park in Ward No. 06 2. Improvements to Roads and Drains in Hegdenagar and Surrounding areas in Ward No. 06 3. Improvements to Roads and Drains in Munivenkatappa Layout Nagawara in Ward No. 06 4. Drilling of Borewells and Maintance in Ward No.06
Client	:	Bruhat Bengaluru Mahanagara Palike
Contractor	:	HONNAPPA MURTHY
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
No.of Sample Tested	:	3
Date of Testing	:	22-06-2019
Technical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{15}

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	85.00	0.386	2312.80	1.70	0.960	28.68	14.61	15.78	15.14	18.93
2	50.00	85.00	0.382	2288.84	1.70	0.960	28.64	14.59	15.75	15.12	18.90
3	50.00	85.00	0.386	2312.80	1.70	0.960	28.60	14.57	15.73	15.10	18.88

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KERB STONE (CORE) TEST REPORT

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Client	:	Bruhat Bengaluru Mahanagara Palike
Contractor	:	HONNAPPA MURTHY
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
No.of Sample Tested	:	3
Date of Testing	:	22-06-2019
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{15}

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	85.00	0.385	2306.81	1.70	0.960	28.48	14.50	15.67	15.04	18.80
2	50.00	85.00	0.378	2264.87	1.70	0.960	28.60	14.57	15.73	15.10	18.88
3	50.00	85.00	0.374	2240.90	1.70	0.960	28.46	14.49	15.65	15.03	18.78

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Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	HONNAPPA MURTHY

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	**25-06-19**
Sample Location	**At plant**	**Date of Testing**	**25-06-19**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	346.00	355.00	328.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	268.00	274.00	254.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	78.00	81.00	74.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	22.54	22.82	22.56	
5	Average Aggregate impact value	(%)	22.64			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	HONNAPPA MURTHY

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM		**Proposed Use**	**WMM**
Sample Location	At plant		**Date of Sampling**	**25-06-19**
			Date of Testing	**25-06-19**

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	600	85	518	70
16.0	12.5	1130	125	998	118
12.5	10.0	772	54	720	58
10.0	6.3	618	52	580	40
Total		**3120**	**316**	**2816**	**286**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.13
Elongation Index(%):	10.16
Combined FI+EL (%)	20.28

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Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, Basaveshwar Nagar Bangalore
Contractor	:	HONNAPPA MURTHY
Date of Testing	:	25-06-19
Type of Mix	:	WMM
Sample I/D	:	WMM 1

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	**Date of Sampling:**	25-06-19
		Date of testing:	25-06-19
Type of material & Purpose:	WMM	**Oven Dry Wt.(gms):**	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	385	385	3.85	96.15	95-100
22.4	1895	2280	22.80	77.20	60-80
11.2	2254	4534	45.34	54.66	40-60
4.75	1998.0	6532	65.32	34.68	25-40
2.36	1400.0	7932	79.32	20.68	15-30
0.6	780.0	8712	87.12	12.88	8.0-22.0
0.075	882.0	9594	95.94	4.06	0-8
Pan	406.0	10000			
Total	10000.0				

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Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, Basaveshwar Nagar Bangalore
Contractor	:	HONNAPPA MURTHY
Date of Testing	:	25-06-19
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	25-06-19
		Date of testing:	25-06-19
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	356	356	3.56	96.44	95-100
22.4	2458	2814	28.14	71.86	60-80
11.2	2672	5486	54.86	45.14	40-60
4.75	1426.0	6912	69.12	30.88	25-40
2.36	852.0	7764	77.64	22.36	15-30
0.6	918.0	8682	86.82	13.18	8.0-22.0
0.075	900.0	9582	95.82	4.18	0-8
Pan	418.0	10000			
Total	10000.0				

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